

In the Claims

1. A clean air filter and delivery apparatus in combination for mounting on a plurality of grid openings of a suspended ceiling of an enclosed building area independent of any heating, ventilating and air conditioning apparatus therein, said apparatus comprising:

air return means mountable on a first grid opening of a suspended ceiling for receiving pre-filtered air flow therethrough,

air filter means mounted above any suspended ceiling and in fluid communication with said air return means,

blower means mounted above any suspended ceiling and positioned remotely downstream of said air filter means in air tight in-line fluid communication therewith for efficiently pulling air through said air filter means, said blower including, a single inlet backward curved centrifugal fan including a circular inlet and a circular outlet for air tight mating engagement with said flexible duct means,

air supply means mountable downstream of said blower means in-line therewith on a second grid opening of a suspended ceiling remote from a first grid opening thereof for delivering filtered air flow therethrough, and

flexible duct means positioned above any suspended ceiling between said blower means and said air supply means for delivering air tight fluid flow therebetween.

2. The clean air filter and delivery apparatus as defined in claim 1 wherein said air filter means comprises,

a first filter cartridge having a frame including upper and lower surfaces joined by opposing end surfaces and an elongate sheet of pleated filter media extending substantially from one end surface to the opposing end surface with said pleats thereon substantially perpendicularly to and between said upper and lower surfaces for greatly increasing the surface area of said filter media with respect to a cross-sectional area of said frame.

Please cancel claims 9 and 10 without prejudice.

11. The clean air filter and delivery apparatus as defined in claim 1 wherein said air filter means comprises,

an air tight hollow box including a circular inlet and a circular outlet having a first filter cartridge therein, said filter cartridge having a frame including upper and lower surfaces and elongate frame members therebetween, and elongate sheet of filter media extending in a plurality of backfolded pleats substantially perpendicularly to and between said upper and lower surfaces between said elongate frame members for increasing the area of filtering media filtering air flowing therethrough.

13. A clean air filter and delivery apparatus in combination for mounting on a plurality of grid openings of a suspended ceiling of an enclosed building area independent of any heating, ventilating and air conditioning apparatus therein, said apparatus comprising:

an air return having a rectangular border for mounting on a first grid opening, said air return including a circular outlet for air tight connection with a flexible duct work,

an air filter cartridge in fluid communication with said air return, said filter cartridge including a frame including upper and lower surfaces and elongate frame members therebetween, an elongate sheet of filter media extending in a plurality of backfolded pleats substantially perpendicularly to and between said upper and lower surfaces between said elongate frame members for an increased area of filtering media filtering air flowing therethrough,

a single inlet backward curved centrifugal fan including a circular inlet and a circular outlet, said fan efficiently drawing air through said return and through said air filter cartridge and drawing filtered air through said centrifugal fan while pushing air through said air delivery supply,

a flexible ductwork positioned in air tight relation between said air return circular outlet and said circular inlet of said centrifugal fan,

an air delivery supply having a rectangular border for mounting on a second grid opening remote from a first grid opening and having a circular inlet thereon, and

a flexible ductwork positioned in air tight relation between said centrifugal fan outlet and said air delivery supply circular inlet.

17. A clean air filter and delivery apparatus in combination for suspended mounting from a ceiling of an enclosed building area independent of any heating, ventilating and air conditioning apparatus therein, said apparatus comprising:

an air return including a circular outlet for air tight connection with rigid spiral duct work,

an air filter cartridge in fluid communication with said air return, said filter cartridge including a frame including upper and lower surfaces and elongate frame members therebetween, an elongate sheet of filter media extending in pleats substantially perpendicularly to and between said upper and lower surfaces between said elongate frame members for filtering air flowing therethrough,

a single inlet backward curved centrifugal fan including a circular inlet and a circular outlet, said fan efficiently drawing air through said return and through said air filter cartridge and drawing filtered air through said centrifugal fan while pushing air through said air delivery supply,

a rigid spiral ductwork positioned in air tight relation between said air return circular outlet and said circular inlet of said centrifugal fan,

an air delivery supply having a rectangular border for mounting on a second grid opening remote from a first grid opening and having a circular inlet thereon, and

a flexible ductwork positioned in air tight relation between said centrifugal fan outlet and said air delivery supply circular inlet.

Claim Listing

1) (Currently amended) to emphasize the remote mounting single inlet, single outlet blower means with the air supply.

2) (Currently amended) to more specifically define the filter media.

3) Previously Cancelled.

4-8) Unchanged.

9-10) Cancelled.

11) (Currently Amended) to more specifically define the filter media.

12) (Unchanged)

13) (Currently Amended)

14-16) (Unchanged)

17) (Currently Amended) to more specifically define the filter media.

18-19) (Withdrawn) by the Examiner's restriction.

20) (Unchanged)

21. (New) to more specifically define the filter media.